

FARADAY CENTENARY CELEBRATIONS, 1931.

I.E.E. FARADAY CENTENARY CELEBRATIONS MAIN COMMITTEE.

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(Chairman).

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	Mr. A. P. Young, O.B.E.

REPORT OF MAIN COMMITTEE.

Whilst the Albert Hall Exhibition constituted the greatest single concentration of effort of the electrical industry, to celebrate the researches of Faraday, the additional activity all over the world in the form of meetings, lectures, exhibitions, civic functions, special illuminations and the like, attracted widespread attention and interest.

In the space available it is impossible to enumerate all these activities in detail. The most important of the events in London were the meetings organized by the Royal Institution at the Queen's Hall and by the Institution of Electrical Engineers at Kingsway Hall, followed at the close of the week by a banquet given by the Government to all the delegates who attended the celebrations. Particulars will be found in the Faraday Number of the *I.E.E. Journal* (November 1931). The full report of the Exhibition and Publicity Sub-Committee is given below.

At Liverpool an exhibition, attended by 17 000 persons, was held and was preceded by a civic reception and luncheon. At Newcastle, a lecture by Prof. W. M. Thornton was attended by over 2 000 persons and was supported by the civic authorities and by other mayors from Tyneside. A similar civic meeting at Hull (North Midland Centre) was addressed by Principal Morgan and was equally well attended. At Birmingham a lecture was delivered by Mr. F. Forrest, the attendance being over 800. Prof. J. T. MacGregor-Morris lectured at Loughborough (East Midland Sub-Centre) and Prof. H. Stansfield and Prof. G. D. A. Parr at Southampton and Portsmouth (Hampshire Sub-Centre) respectively. Manchester (North-Western Centre) organized a large conversazione in which other interested societies co-operated. The Western Centre participated in a similar conversazione at Cardiff, and in a commemorative meeting

at Exeter, which included an exhibition, and lectures were delivered at other towns in the area.

On many of these occasions the broadcast of Sir William Bragg's address at the Queen's Hall, and also the Faraday film, formed a feature.

Overseas, important meetings were held in Sydney, Wellington, and Brisbane, at which prominent men gave addresses (see *I.E.E. Journal*, December 1931, page 97).

In Paris the Société Française des Électriciens held a special Faraday Session, at which its President, Prof. Henri Chaumat, delivered an address. The Society followed this with a banquet to which representatives of the I.E.E. were invited as guests.

The Institute of Electrical Engineers of Japan issued in September a Faraday Memorial Number of their *Journal*. In addition, on the 16th September the President of the Japanese Institute, Dr. K. Takatsu, broadcast throughout Japan a popular lecture on Faraday's work and achievements. The Centenary was also celebrated in Tokyo under the auspices of various technical organizations.

The British Electrical Development Association supported all the foregoing activities in Great Britain, and used its organization in many other ways for calling public attention to the celebrations. Amongst these activities was the promotion of the floodlighting of many public buildings in the towns and cities of the country, and the distribution, with the assistance of educational authorities, of about 100 000 brochures on the life of Faraday. Over 2 000 handbooks containing lecture notes were also issued to local scientific societies, etc., and school-essay competitions were arranged by the Association.

CLIFFORD C. PATERSON,
Chairman of Main Committee

December, 1931.

EXHIBITION AND PUBLICITY SUB-COMMITTEE.

Lieut.-Col. W. A. Vignoles, D.S.O. (*Chairman*).

Mr. J. I. Bernard (*Secretary*).

Mr. W. Imrie-Smith (*Asst. Secretary*).

Commander Rollo Apple-	Mr. T. Martin.
yard, O.B.E.	Mr. W. M. Mordey.
Prof. H. E. Armstrong,	Mr. C. C. Paterson, O.B.E.
F.R.S.	Mr. R. W. L. Phillips.
Sir William Bragg, K.B.E.,	Dr. W. G. Plummer, M.Sc.
F.R.S.	Col. Sir Thomas F. Purves,
Mr. A. C. Cramb.	O.B.E.
Captain P. P. Eckersley.	Sir Robert Robertson,
Mr. H. Willoughby Ellis.	K.B.E., F.R.S.
Mr. R. Milward Ellis.	Mr. C. Rodgers, O.B.E.,
Mr. P. Good.	B.Sc., B.Eng.
Mr. W. J. Jones.	Mr. P. F. Rowell.
Mr. F. R. Lewis.	Mr. C. Holmes Waghorn.
Mr. A. Marshall.	Mr. A. P. Young, O.B.E.

REPORT OF THE EXHIBITION AND PUBLICITY SUB-COMMITTEE.

On the 5th February, 1929, the Managers of the Royal Institution called a meeting of representatives of

all societies and associations considered likely to be interested in the organization of celebrations to commemorate the centenary of Faraday's discovery of electromagnetic induction. This meeting was held under the chairmanship of Sir Arthur Keith, F.R.S., at the Royal Institution, and it was eventually decided that two committees should be formed, one under the auspices of the Royal Institution and a second under the auspices of the Institution of Electrical Engineers.

These two committees were instructed to consult together and to co-operate in the organization of celebrations of a suitable character.

On the 17th April, 1929, the Institution of Electrical Engineers called a meeting of representatives of the associations connected with the electrical industry, and at this meeting an Institution of Electrical Engineers Faraday Centenary Celebrations Committee was appointed to confer with the Royal Institution and to prepare a report. The appointment of this committee was subsequently confirmed by the Council of the Institution of Electrical Engineers. This committee held a number of meetings and considered, among other things, a scheme for an Exhibition which, in December 1928, had been put forward by Colonel Vignoles, the then Director of the British Electrical Development Association, in a memorandum to the Executive Committee of that Association; this scheme suggested that the celebrations should include "a Faraday Centenary Electrical Exhibition designed to show the latest developments of all branches of science, engineering, and industry, that have been derived from or benefited by the work of Faraday."

It was eventually decided to include such an Exhibition as part of the celebrations, the Royal Institution undertaking to co-operate in dealing with the scientific aspects of the Exhibition.

The Committee agreed that the Exhibition should be designed to interest the public in the work of Faraday, to show something of that work, and to demonstrate the great developments that have followed his discoveries.

It was decided that the Exhibition should be, as far as possible, devoid of any element of advertisement, and be mainly educational in character, and while the exhibits would necessarily have to be somewhat technical, efforts should be made to interest the general public.

ORGANIZATION.

The Faraday Celebrations Committee of the Institution of Electrical Engineers appointed the Exhibition Sub-Committee, which consisted of representatives of the Institution of Electrical Engineers, the Royal Institution, the Federal Council for Chemistry, and other societies and associations, to act as an Executive Committee to organize and carry out the Exhibition. Arrangements were made with the British Electrical Development Association to provide the necessary secretarial facilities, Mr. J. I. Bernard, a member of the staff of that Association, being appointed Secretary to the Sub-Committee; Mr. W. Imrie-Smith was later appointed Assistant Secretary and took over the whole of the duties on Mr. Bernard being incapacitated through illness.

Two panels, to deal with questions of publicity and finance respectively, were subsequently set up by the

Sub-Committee. Mr. F. R. Lewis, of Exhibition Organizers, Ltd., was consulted as to the organization and was eventually appointed Manager of the Exhibition. His experience and expert assistance largely contributed to its success.

FINANCE.

Ordinary commercial exhibitions are financed to a very large extent by the firms exhibiting, who not only provide at their own expense the exhibits and the stands which they erect, but also, by paying a rental for the space occupied, provide a large part of the cost. The amount received from gate money is in many cases sufficient to pay only a small portion of the total expenses. In the case of the Exhibition contemplated it was realized that it was impossible to ask firms or commercial associations to pay for space, and that, therefore, if the Exhibition were to be carried through, some monetary contributions would have to be obtained from other sources. Eventually the Institution of Electrical Engineers agreed to meet any expenditure on the Exhibition up to a total of £10 000, while a further sum of £1 642 was collected by the Federal Council for Chemistry from firms and others connected with the chemical industry. With these two amounts guaranteed, and an allowance made for admission receipts, the maximum expenditure which the committee might incur was fixed at £12 350.

The cost of preparing the Hall, the stands, the supply of electricity and all incidental expenses were met from the funds thus provided.

The various associations connected with the electrical and chemical industries were approached and were invited to provide displays to illustrate certain aspects of the developments that had arisen from Faraday's work, the expense of such displays being borne by the association concerned.

The principal displays were provided, in the manner indicated, by the British Electrical and Allied Manufacturers' Association, the Cable Makers' Association, the Electric Lamp Manufacturers' Association, the British Electrical Development Association, the British Broadcasting Corporation, the General Post Office, the Central Electricity Board, and the Federal Council for Chemistry, while the Royal Institution made and provided apparatus and arranged the demonstrations on the eight stands surrounding the central feature.

In a building such as the Albert Hall, the authorities very rightly insisted upon all electrical and other work being carried out in a very substantial manner, so as to avoid all risk of fire or other damage, and this naturally increased the cost of the work. The statement of accounts submitted to the Council shows that the expenditure amounted to £12 023, or £327 below the limit fixed, while owing to the receipts being considerably greater than the amount estimated, the amount called upon from the funds of the Institution of Electrical Engineers is some £1 800 less than the £10 000 guaranteed.

Including the amounts expended by exhibitors on their displays, the total cost of the Exhibition is estimated at not less than £20 000. In the present position of industry this must be considered to be a very satisfactory effort on the part of the electrical and chemical industries.

All financial matters were treated on a credit basis, and the Committee never handled any actual funds. In accordance with the procedure agreed upon by the Finance Panel at a meeting held on the 21st July, 1931, all accounts were submitted to the scrutiny of Colonel Vignoles as Chairman of the Committee and, after his endorsement, were forwarded to the Institution of Electrical Engineers, who made the actual payments.

Finally, the various statements of accounts, prepared for the Committee by the Assistant Secretary, were checked by the accountant of the Institution of Electrical Engineers and will subsequently be audited by its auditors.

THE EXHIBITION.

A number of halls were considered in the first instance as a possible site for the Exhibition, but it was eventually decided, taking all things into consideration, and especially in view of the character of the Exhibition desired, that the Royal Albert Hall, while rather small for the scope of the exhibits to be displayed, was, owing to its shape, and the atmosphere which it was thought possible to create, the most suitable. Arrangements were therefore made for the use of this Hall.

The general scheme of the Exhibition eventually decided on was to place a statue of Michael Faraday in the centre on a raised platform; on this were cases containing items of personal interest, such as diaries and laboratory notes, while three rows of stands surrounded the central feature and were arranged with exhibits to show progressively from the centre to the circumference Faraday's work and the developments that had come from it.

The fundamental experiments carried out by Faraday were arranged by the Royal Institution on the eight stands immediately surrounding the centre, while the remainder of the space was devoted to the display of modern developments in the various electrical, electrochemical, and chemical industries.

In arranging the displays, assistance was received from a very large number of collaborators, apart from the associations mentioned above; reference is made to these in the Souvenir Catalogue, in which every effort was made to give a complete list of acknowledgments.

DECORATIVE LIGHTING SCHEME.

A special lighting and decorative scheme was designed for the Exhibition Committee by the Lighting Service Bureau of the Electric Lamp Manufacturers' Association, and was eventually adopted, the Association kindly presenting all the lamps required. The whole ceiling was covered with a large velarium in white and primrose; the main illumination was provided by large floodlights concealed in the balcony, which projected light on to the velarium; while a large ornamental lighting fitting some 40 feet in length was suspended in the centre of the Hall. Additional decoration was provided by 132 wall fittings on the pillars round the gallery, and eight luminous arches were arranged in the stands surrounding the central feature.

The whole lighting scheme was considered to be extremely successful, the illumination on the floor being of high intensity and of a very pleasing character.

The electric power used in the scheme amounted to 256 kW. Altogether the lighting was, as was intended by the Committee, an attractive feature of the Exhibition, and the design reflected great credit on Mr. R. W. Maitland, the Lighting Service Bureau architect, who prepared the scheme.

In addition to the exhibits in the main Hall and entrance, a reproduction of Faraday's Laboratory was arranged in the King's Room by the Wellcome Historical and Medical Museum, and short lectures on Faraday and his work were there given.

ADDITIONAL EXHIBITS.

In a basement adjoining the entrance hall a high-frequency furnace was shown in operation, where visitors could see small busts of Faraday being cast, these busts being subsequently placed on sale at the bookstall.

In the rehearsal room a talking film on Michael Faraday was shown at periodical intervals throughout each day of the Exhibition, with the exception of the 24th September, when a special lecture, fully illustrated by experiments, was given by Dr. Cramp, of Birmingham University.

The film on Michael Faraday was produced at the Engineering Research Laboratory of the British Thomson-Houston Co., Ltd., at their own expense, the Exhibition Committee merely buying such copies of the film as were required for use. The film shows Sir William Bragg speaking at Faraday's lecture table and describing Faraday's work, and some of Faraday's experiments are included, while Faraday himself is seen making his famous experiment which led to the discovery of electromagnetic induction.

DEMONSTRATORS AND GUIDES.

In order that the numerous experiments to be shown should be efficiently explained to visitors, a volunteer staff of 270 demonstrators was organized. The members of this staff were drawn chiefly from the Students' Section of the Institution of Electrical Engineers, the colleges of the University of London, technical colleges, and other educational and scientific institutions. They were arranged in appropriate groups by the Assistant Secretary and Mr. A. Marshall, and were instructed by Sir William Bragg and his staff at the Royal Institution, and by Sir Robert Robertson at the Government Laboratory, while Prof. Darling, Mr. W. F. J. Walton, and Mr. F. G. H. Tate assisted with the organization and allocation of the demonstrators for duty with the various exhibits. The demonstrators carried out their duties with efficiency and with great enthusiasm, and undoubtedly assisted the public very greatly to appreciate what they saw.

SOUVENIR CATALOGUE AND GUIDE.

As a key to the exhibits and as a memento of the occasion, a Souvenir Guide and Catalogue of 248 pages was compiled. This contained not only descriptions of the exhibits themselves, but also articles by Sir William Bragg, Prof. H. E. Armstrong, and Mr. A. Marshall as introductions to the various sections in which the exhibits were grouped. The whole of the exhibits were catalogued under stand and item reference

letters and numbers, and a reference to this catalogue shows that over 700 items, large and small, were displayed. Over 7 400 catalogues were sold at the Exhibition at the full price of 1s. each.

OPENING OF THE EXHIBITION.

The whole Exhibition was complete and every exhibit in its place by the evening of Tuesday, 22nd September, when the Institution of Electrical Engineers held a conversazione at the Exhibition and some 2 300 members and their friends attended. A private view was held on the morning of Wednesday, 23rd September, and on the afternoon of the same day at 4.30 p.m. Mr. C. C. Paterson, President of the Institution of Electrical Engineers, presided at the ceremony when General the Right Hon. J. C. Smuts, P.C., opened the Exhibition. The proceedings at this opening ceremony were, through the co-operation of the General Post Office, the British Broadcasting Corporation, and Messrs. Standard Telephones and Cables, Ltd., amplified in the Hall, and broadcast by the British Broadcasting Corporation. A vote of thanks to General Smuts was proposed by Colonel Crompton, and the proceedings also included an address by Dr. Jewett, of the American Institute of Electrical Engineers, who, on behalf of American and other scientific societies abroad, extended greetings to British scientists gathered for the opening of the Faraday Exhibition. He spoke from Boston, U.S.A., his words being carried over one of the Post Office transatlantic commercial radio-telephone circuits to the Exhibition.

PUBLICITY.

The problem with which the Publicity Panel had to deal was to secure as much publicity as possible for the Faraday Celebrations generally, with a view to interesting the public in the Exhibition and to securing the attendance of as many visitors as possible, bearing in mind the size of the Royal Albert Hall and that very large numbers would be an embarrassment.

The work of the Panel was carried out in three ways:—

- (a) By the use of circular letters and the distribution of programme folders, poster stamps, showcards, and window bills for display free of charge, the number distributed being as follows:—

34 000 programme folders;
18 000 window bills;
4 000 showcards;
500 000 poster stamps.

- (b) By posters and by paid announcements in the Press, and other paid-for advertising.
- (c) By interesting the Press and supplying them with material for the preparation of articles on Faraday and the Exhibition.

Propaganda and advertising were placed in the hands of Carlton Publicity, Ltd., while Mr. C. Holmes Waghorn was appointed to deal with editorial work and to act as general Press agent.

In accordance with a schedule prepared early in the year, circular letters enclosing or offering window bills, programme folders, showcards, etc., were sent to foreign

legations, overseas clubs, railway and steamship companies, chambers of commerce, travel agencies, hotels, supply undertakings, and universities. The number of folders, bills, and showcards may appear to be very small, but it is doubtful whether a larger expenditure would have produced any proportionally greater results.

A very striking poster design by Mr. E. McKnight Kauffer was adopted and displayed on 2 000 sites of the London and suburban railways; the Underground Railways also placed 8 000 posters of window-bill size in their trains, and 350 omnibus-side sites belonging to the London General Omnibus Co. were utilized.

The Press advertising was restricted to one insertion of a display advertisement in 15 national and 10 provincial papers, while during the Exhibition an announcement of approximately four lines appeared daily in 20 national papers.

A notable feature of the Press advertising was the front page of the special Faraday Number of *The Times* on Monday, 21st September, announcing the Faraday Celebrations and the Exhibition. This page, the design for which was prepared by Mr. Clifford Webb, was paid for jointly by the Royal Institution, the Exhibition Committee, and the British Electrical Development Association.

The preparation of suitable material for issue to the editors of the Press all over the world was commenced at an early date, a special mailing list of nearly 900 names was prepared, and material in several languages was dispatched to British and foreign newspapers and journals in accordance with a carefully arranged schedule, commencing early in the year.

On the 19th September a Press room was established at the Royal Institution, and was moved to the Royal Albert Hall on the 21st September, where it remained throughout the Exhibition. Tables of statistics, interesting items about the Exhibition, records, and photographs were prepared and displayed for the use of the Press. The attendance books show that representatives of 92 news agencies, newspapers and technical publications, etc., called for information.

There is no doubt that the Faraday Celebrations and the Exhibition interested the Press very much, as is shown by the following table giving the amount of Press cuttings received up to the end of October:—

Class of publication	Column inches
National newspapers	5 257
Magazines	699
Technical and trade publications ..	4 430
Suburban newspapers	1 784
Provincial newspapers	14 064
Foreign newspapers	4 712
Total	30 946

The value of this publicity is difficult to assess, but the amount of space, if paid for at the usual advertising rates, would have cost nearly £43 000.

A considerable amount of money was spent in providing

the Press with suitable photographs, and examination of the guard books in which cuttings are mounted shows that this policy was justified, as it undoubtedly assisted in securing editorial notice.

FARADAY FILM.

The film of Michael Faraday having been presented to the Exhibition Committee, it was thought very desirable to secure as wide a circulation as possible for this, although it was not strictly an exhibition matter. Eventually, through the efforts of Mr. F. A. Enders, of Film Booking Offices, Ltd., the Faraday film was accepted by the Gaumont British Company for exhibition in 64 of their theatres. This itinerary commenced on the 13th September and is still being carried out. In addition to the above, there are other bookings which have been arranged in the provinces by the area officers of the British Electrical Development Association.

RESULTS OF THE EXHIBITION.

It is difficult to assess the results of an Exhibition such as the one under consideration, but it can be claimed that the celebrations and the Exhibition did succeed in interesting the public in Michael Faraday as a man and scientist, and in the part played by the electrical, chemical and other industries in modern civilization. During the period the Exhibition was open it is estimated that some 50 000 people, including season-ticket holders, obtained admission. That the educational nature of the Exhibition was appreciated is clearly marked by the fact that 398 schools organized parties, aggregating 13 179 students, to visit the Exhibition, these coming from places as far away as Canterbury, Ipswich, Nottingham, Southampton, Winchester, Cheltenham, Southend-on-Sea, Tonbridge, and York. One party, consisting of 239 boys, came from Merton in six motor-coaches.

Despite the fact that only about 80 people could be seated at one time in the rehearsal room and that there

was an admission charge of 2d., the Faraday film was visited by 6 124 people.

Looking at the figures, it may be claimed that the number attending the Exhibition was as large as was desirable. If the attendance had been greater the Hall would have been overcrowded on several days and the doors would probably have had to be closed; 50 000 is, in fact, about as many as can be handled at an exhibition in the Albert Hall during a period of 10 days. Throughout the Exhibition there were queues to view the Faraday film, the Faraday laboratory, and the operation of the high-frequency furnace.

The demonstrators report that nearly all the members of the public with whom they conversed found some special items of interest, and that a very large number of non-technical people sought information on matters of a technical or semi-technical character.

CONCLUSION.

Arrangements are being made to send to all the demonstrators, and firms and individuals who gave assistance to the Committee, specially bound copies of the Faraday Number of the *I.E.E. Journal* and of the Guide and Catalogue to the Exhibition, with notes of thanks for the assistance rendered.

In conclusion the Committee would like to acknowledge, and to express once again their very sincere thanks for, the assistance which has been given to them from every quarter. They would also like to record their appreciation of the extraordinary way in which hundreds of people volunteered assistance and helped to give the Faraday Centenary Exhibition its unique character, and to make it memorable in the history of British science and industry.

W. A. VIGNOLES,

*Chairman, Exhibition and Publicity Sub-Committee.
November, 1931.*